

GW26-e4495**A study of the association of plasma irisin levels and coronary artery diseases**

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OBJECTIVES Irisin is a newly discovered myokine, which is involved in energy metabolism and associated with 'browning' of the white adipose tissue, obesity, diabetes mellitus and metabolic syndrome. It's still uncertain that whether plasma irisin level is associated with coronary artery diseases(CAD). The purpose of this study is to explore the relationship between circulating irisin levels and CAD.

METHODS A total of 209 patients complained with 'chest discomfort' undergone coronary angiography were enrolled in this study. They were divided into non-CAD(n=74) and CAD (n=135) groups. The CAD group was further divided into three groups: SAP (n=52), UAP (n=30), AMI (n=53). The levels of plasma irisin, clinical parameters, lipid profile and C reactive protein (CRP) were measured. and echocardiography was performed on enrolled subjects.

RESULTS The levels of plasma irisin were significantly higher in the CAD group (124.10 ± 58.56 ng/ml) than those in the non-CAD group (95.66 ± 59.8 ng/ml), $p=0.001$. And positively associated with aortic root diameter ($r=0.181$, $p=0.046$), left ventricular posterior wall thickness(0.191 , $p=0.035$), interventricular septum thickness (0.207 , $p=0.022$), and multiple linear regression reveal that irisin concentration is associated with blood uric acid ($r=0.397$, $p=0.003$), serum creatinine ($r=-2.239$, $p=0.03$) independently. The levels of plasma irisin were significantly lower in the SAP group than UAP group (103.48 ± 61.50 ng/mL VS 133.67 ± 58.24 ng/mL, $P=0.021$) and AMI group (103.48 ± 61.50 ng/mL VS 139.20 ± 50.12 ng/mL, $P=0.002$). But it is not significantly difference between UAP and AMI group (133.67 ± 58.24 ng/mL VS 139.20 ± 50.12 ng/mL, $P=0.671$). The plasma irisin concentration of CAD patients with normal renal function or abnormal renal function were 125.69 ± 59.66 ng/mL, 110.78 ± 51.09 ng/mL ($P=0.33$), respectively. After one year of follow up of AMI group subjects, the data show that the incidence of MACEs is lower in irisin > median group (32.14%) than irisin < median group(50%).

CONCLUSIONS The plasma irisin concentration is higher in CAD patients than non CAD subjects, and correlated with aortic root diameter, left ventricular posterior wall thickness, interventricular septum thickness, blood uric acid, serum creatinine in the CAD patients. And gradually increasing in the subgroups of CAD(SAP, UAP, AMI). And lower in patients of CAD with normal renal function than abnormal renal function. The incidence of MACEs is lower in AMI subjects with higher irisin levels undergone percutaneous coronary intervention treatment.

GW26-e0387**Thromboelastograph in the clinical application of acute coronary syndrome**

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OBJECTIVES The purpose of this study is to clear the relationship platelet reactivity to adenosine diphosphate by Thromboelastograph with ischemic events after PCI.

METHODS We measured platelet reactivity to adenosine diphosphate (ADP) by Thromboelastograph in acute coronary syndrome undergoing PCI (n=89). All patients take orally clopidogrel with loading dose of 300 mg, or maintenance dose of 75 mg at least 3 days. According to the result of Thromboelastograph, We divide the ADP inhibition rate into the two groups (A group ADP inhibition rate more than 50% and B group ADP inhibition rate less than 50%), and observe six to nine months events of the two groups. End point events were defined as new cardiovascular events (death, myocardial infarction, myocardial ischemia, peripheral vascular disease) and new cerebrovascular events (cerebral infarct and hemorrhage).

RESULTS Within six to nine months after discharge, 11 of 22patients in A group occurred events, including TIA (n=1), unstable angina (n=5), variant angina pectoris (n=1), NSTEMI(n=1), STEMI(n=1), cardiac insufficiency(n=1). However in B group, there were 19 events that occurred in 67patients within six to nine months after discharge, including death(n=1), cerebral infarction(n=1), NSTEMI(n=1), unstable angina(n=16). There was significant statistical difference between the two groups on gender, history of high blood pressure, urea

nitrogen, platelet inhibition mediated by ADP, AA (arachidonic acid) of platelet inhibition mediated by AA (arachidonic acid), ADP mediated MA($P=0.004$, $P=0.022$, $P=0.029$, $P=0$, $P=0$). Logistic regression analyses revealed that ADP mediated MA is the independent predict factors of the occurrence of major cardiovascular and cerebrovascular events ($P=0.029$).

CONCLUSIONS All data shows that ADP mediated platelet MA value can guidance antiplatelet therapy in patients at risk of acute coronary syndrome, so as to reduce the incidence of end point events.

GW26-e0397**Impact of rhBNP on reperfusion injury in the patients with acute myocardial infarction undergoing emergency percutaneous coronary intervention**

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OBJECTIVES To investigate the effect of Lyophilized Recombinant Human Brain Natriuretic Peptide (rhBNP) on myocardial reperfusion injury in the patients with ST-segment elevation myocardial infarction (STEMI) of anterior wall undergoing emergency percutaneous coronary intervention (PCI).

METHODS This prospective study included patients with acute STEMI of anterior wall undergoing emergency PCI hospitalized at Affiliated Zhongshan hospital of Dalian University from January 2013 to October 2014. Patients with SBP < 100mmHg, culprit vessel blood flow of TIMI 2-3 before PCI, and renal insufficiency were excluded. 60 patients were randomly divided into rhBNP group (n = 29) and control group (n = 31). In the rhBNP group, rhBNP was injected by intravenous with 1.5 ug/kg between 3 minutes and 5 minutes followed with continuous infusion of $0.01\mu\text{g}^{-1}\cdot\text{min}^{-1}$, and the total dose of rhBNP was 0.5g in each patient. Other procedures of rhBNP group were similar with those of control group. Patients' demographic, clinical and angiographic characteristics were obtained. The superoxide dismutase (SOD), malonaldehyde (MDA) were measured. The parameters presenting myocardial infarction including corrected TIMI framecount (CTFC) and myocardial blush grade (MBG) were calculated. The reperfusion arrhythmias was recorded. Left ventricular ejection fraction (LVEF) of the recruited patients was assessed at 3-5 days and 6 weeks after emergency PCI.

RESULTS The serum level of MDA significantly lower(5.52 ± 1.21 vs. 6.72 ± 1.22 , $p < 0.05$), and serum SOD level was significantly higher in rhBNP group than those in control group ($84.93.52 \pm 14.28$ vs. 73.92 ± 13.71 , $p < 0.05$). Compared with control group, CTFC was significantly lower in rhBNP group (24.23 ± 3.65 vs. 26.97 ± 3.28 , $p < 0.05$). The MBG \geq grade 2 was more common(86.21% vs. 61.29% , $p < 0.05$), and incidence of reperfusion arrhythmias was less common in rhBNP group than those in control (all $p < 0.05$). RhBNP group patients' LVEF was higher than that in control group at both 3 days and 6 weeks after emergency PCI (53.82 ± 9.26 vs. 51.45 ± 10.12 and 55.12 ± 11.54 vs. 52.17 ± 13.03 respectively, all $p < 0.05$). No significant differences including age, gender, hypertension, diabetes, hyperlipidemia, history of previous myocardial infarction, blood pressure and heart rate before PCI, time from onset to balloon, diseased vessel number and culprit lesion site were observed between the two groups.

CONCLUSIONS RhBNP can effectively reduce myocardial ischemia-reperfusion injury in patients with STEMI of anterior wall after emergency PCI.

GW26-e0501**Characteristics of coagulation-anticoagulation-fibrinolytic system related gene mRNA expression in patients with acute myocardial infarction and stable angina pectoris**

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OBJECTIVES The objective of this study was to investigate expression differences of coagulation -anticoagulation - fibrinolytic system related genes mRNA among acute myocardial infarction (AMI), stable angina pectoris (SAP) and control groups, and then analyze systematically their dynamic trends in myocardial ischemia as well as arterial thrombosis.

METHODS Whole Human Genome Oligo Microarrays were applied to assess the differential expression characteristics of coagulation -anticoagulation - fibrinolytic system related mRNAs in patients with AMI (n=20), SAP (n=20) and controls (n=20).